

Appl. No. 09/877,999 Amdt. dated Dec. 11, 2003 Reply to Office action of Sept. 15, 2003

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (Currently Amended). Water-soluble supramolecular self-assemblies of a polyelectrolyte ~~comprising~~ **consisting essentially of:**

at least one polyelectrolyte compound selected from the group consisting of

a. diblock copolymers ~~including~~ <sup>(composed of monomers that are</sup> which include either ionizable ~~units~~ <sup>or</sup> or charged ~~units~~ <sup>(composed of monomers that are</sup> or mixtures of ionizable ~~and~~ or charged units **originating from a first monomer,** in combination with non-ionic hydrophobic units **originating from a second monomer,**

b. multiblock copolymers ~~including~~ which include either ionizable units, ~~or~~ charged units or mixtures of ionizable and charged units **originating from a first monomer,** in combination with non-ionic hydrophobic units **originating from a second monomer, and**

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c. random copolymers with grafted hydrophilic and non-ionic oligomers or polymers, **wherein** said random copolymers including **include either** ionizable units, ~~or~~ charged units or mixtures of ionizable and charged units **originating from a first monomer**, in combination with non-ionic hydrophobic units **originating from a second monomer**;

wherein a polyelectrolyte segment forms a core of the assembly and chemically bears non-ionic hydrophobic repeating units.

Claim 2 (Previously Amended). The supramolecular self-assemblies of claim 1, wherein:

said diblock copolymers include at least two blocks, one of which is hydrophilic and uncharged and another of which contains at least one repeating unit selected from ionizable or charged units in combination with non-ionic hydrophobic units.

Claim 3 (Previously Amended). The supramolecular self-assemblies of claim 2, wherein:

said ionizable units are repeating units that can be transformed from a non-ionic to a charged state.

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Claim 4 (Previously Amended). The supramolecular self-assemblies of claim 3 wherein:

transformation to a charged state is caused by a change in pH or conduction of a chemical reaction.

Claim 5. Cancelled

Claim 6 (Previously Amended). The supramolecular self-assemblies of claim 2, wherein:

said ionizable or charged block, bearing hydrophobic repeating units, is synthesized from at least one hydrophobic compound selected from the group consisting of vinyl monomers, vinyl oligomers, and vinyl polymers.

Claim 7 (Previously Amended). The supramolecular self-assemblies of claim 6, wherein;

said hydrophobic compound is at least one compound selected from the group consisting of acrylates, acrylamides, alkylacrylates, alkylacrylamides, arylacrylates and arylacrylamides.

Claim 8 (Previously Amended)). The supramolecular self-assemblies of claim 7, wherein:

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said hydrophobic compound includes at least one aliphatic or aromatic moiety selected from the group consisting of methacrylates and methacrylamides.

Claim 9 (Original). The supramolecular self-assemblies of claim 6, wherein:

said hydrophobic compound is at least one vinyl-terminated biodegradable polyester.

Claim 10 (Canceled).

Claim 11 (Previously Amended). The supramolecular self-assemblies of claim 2, wherein:

said ionizable units include at least one compound selected from the group consisting of alkylacrylic acids, (aminoalkyl)acrylates, and (aminoalkyl)alkylacrylates.

Claim 12 (Original). The supramolecular self-assemblies of claim 2, wherein:

said hydrophilic block is synthesized from at least one hydrophilic compound selected from vinyl monomers, vinyl oligomers and vinyl polymers.

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Claim 13 (Previously Amended). The supramolecular self-assemblies of claim 12, wherein:

said hydrophilic compound is at least one compound selected from the group consisting of acrylates, acrylamides, alkylacrylates, alkylacrylamides, and N-vinyl-2-pyrrolidones.

Claim 14 (Original). The supramolecular self-assemblies of claim 2, wherein:

said hydrophilic block originates from a macroinitiator based on poly(ethylene glycol) or poly(N-vinyl-2-pyrrolidone).

Claim 15 (Withdrawn). A pharmaceutical formulation comprising supramolecular self-assemblies of claim 1 in combination with an effective amount of at least one pharmacological constituent.

Claim 16 (Withdrawn). The pharmaceutical formulation of claim 15, wherein the pharmacological constituent is a drug.

Claim 17 (Withdrawn). The pharmaceutical formulation of claim 15, wherein the pharmacological constituent is a peptide, protein or genetic material.

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Claim 18 (Withdrawn). The pharmaceutical formulation of claim 15, including a targeting ligand.

Claim 19 (Currently Amended). Water-soluble supramolecular self-assemblies of a polyelectrolyte ~~comprising~~ **consisting essentially of:**

at least one polyelectrolyte compound selected from the group consisting of

a. diblock copolymers including at least two blocks, one of which is hydrophilic and uncharged and another of which contains at least one repeating unit ~~selected from which is either an ionizable unit, or a charged unit~~ <sup>a</sup> ~~or a mixture of ionizable and charged units originating from a first monomer,~~ in combination with non-ionic hydrophobic units ~~ionizable units originating from a second monomer,~~ wherein said ionizable or charged block, bearing **includes** hydrophobic repeating units, ~~is synthesized from at least one hydrophobic compound selected from the group consisting of vinyl monomers, vinyl oligomers, and vinyl polymers, and said hydrophobic compound is at least one vinyl-terminated which are biodegradable polyesters selected from the group consisting of vinyl-terminated poly(lactide) and vinyl-terminated poly( $\epsilon$ -caprolactone);~~

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b. multiblock copolymers which include either ionizable units, ~~or~~ charged units or mixtures of ionizable and charged units originating from a first monomer, in combination with non-ionic hydrophobic units originating from a second monomer, and

c. random copolymers with grafted hydrophilic and non-ionic oligomers or polymers, wherein said random copolymers including *are comprised of monomers which include* ~~include either~~ ionizable units, or charged units or mixtures of ionizable and charged units ~~originating from a first monomer,~~ *distinct monomers that include* in combination with non-ionic hydrophobic units ~~originating from~~ ~~a second monomer;~~

wherein a polyelectrolyte segment forms a core of the assembly and chemically bears non-ionic hydrophobic repeating units.